INTRODUCTION

These instructions explain how to install ABB OVR K Series Surge Protective Devices (SPDs) to LSA-PLUS distribution frames. Use:

OVR KT1, OVR KT1/PTC
for analogue PSTN and U interface ISDN telephone lines (via an OVR KE10 earth bar)

OVR K10T1, OVR K10T1/PTC
for analogue PSTN and U interface ISDN telephone lines

The mains power supply to PBX/ISDN equipment should also be protected with the appropriate ABB OVR protector.

1. Safety note:

Warning! Installation by person with electrotechnical expertise only.

Warnung! Installation nur durch elektrotechnische Fachkraft.

Avvertenza! Fare installare solo da un elettricista qualificato.

Avertissement! Installation uniquement par des personnes qualifiées en électrotechnique.

Advertencia! La instalación deberá ser realizada únicamente por electricistas especializados.

2. Before installation

2.1 Check physical compatibility of the product.

– OVR KT1 and OVR KT1/PTC Protectors are designed for installation on LSA-PLUS distribution frames with 'ten pair' disconnection strips, using LSA-PLUS earth bar OVR KE10

– OVR K10T1 and OVR K10T1/PTC Protectors are designed for installation on LSA-PLUS distribution frames with 'ten pair' disconnection strips

2.2 Be sure that the maximum working voltage of the telephone line (DC or AC peak) will never exceed the maximum working voltage of the OVR Protector.

Otherwise it will clamp signal or ringing voltages as though they were transient overvoltages.

	Line to line max. voltage	Line to earth max. voltage
OVR KT1	296 V	296 V
OVR K10T1	296 V	296 V
OVR K10T1/PTC	296 V	296 V

3. Installation

3.1 Orientation

The distribution frame contains several disconnection strips (see Figure 1).
Each disconnection strip has wires entering from two sides.

One side provides connection to the equipment to be protected (ie PBX/ISDN equipment) - this will be our **clean** side.

The other side connects to where transients may come from, ie: the outside world (the incoming lines of the telephone company/ utility and extensions which are routed to another building) - this will be our **line** side.

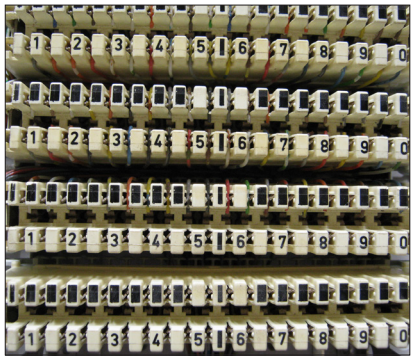

Figure 1:
Connection strips on an LSA-PLUS distribution frame.

3.2 Connection

This section is divided into two parts.
'Part (a)' refers to connection of OVR KT1 and OVR KT1/PTC units via an OVR KE10 earth bar.
For connection of 'ten pair' OVR K10T1 and OVR K10T1/PTC units refer to 'Part (b)'.

(a) OVR KT1 and OVR KT1/PTC
Identify which lines require protection
Each line (or pair) which which connects with the outside world provides transient overvoltages with a route into the electrical system.

Protection must therefore be installed on each of these lines.

Identify:
(i) all incoming lines from your telecommunications provider, and
(ii) any telephone lines which leave the building (eg PBX extensions)

Remove any label holders, magazines & GDT's from the disconnection strip
If the disconnection strips requiring protection are already populated with label holders, magazines or gas discharge tubes (see Figure 2) these must be removed before the ABB OVR KE10 and OVR KT1 or OVR KT1/PTCs can be installed.

Figure 2:
Clear the front face of the connection strip of all obstacles (eg label holders, magazines or gas tubes).

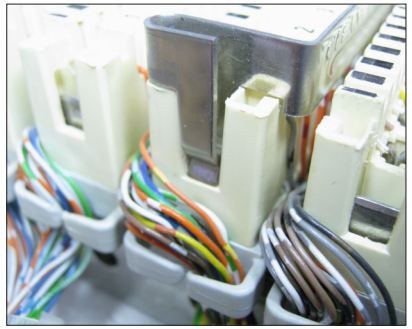

Figure 3:
Connection of OVR KE10 to mounting frame, for earth connection.

Insert the OVR KE10 earth bar
Push the earth bar into the disconnection strip, with the connecting rail on the equipment or **clean** side of the disconnection strip. Make sure that the earth bar is firmly clipped into the earth point (see Figure 3) with the clip or jaws at each end of the earth bar gripping the disconnection strip's earth point.

This will provide the OVR Protector with a substantial connection to earth.

CAUTION: Be sure that the OVR KE10 is installed the right way round, with the connecting rail on the equipment or clean side of the disconnection strip.

Push an OVR Protector into each line requiring protection
Firmly push one OVR KT1 and OVR KT1/PTC Protector into each line (or pair) requiring protection, so that it clips securely onto the earth bar (see Figure 4).

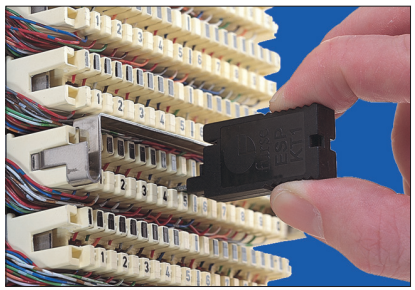

Figure 4:
OVR KT1 being plugged into the disconnection module, and connection into OVR KE10.

Note how the side of the OVR Protector marked **clean** is on the equipment side of the disconnection strip and that the **line** side of the OVR Protector is on the side of the disconnection strip which connects to the outside world.

WARNING: On no account should an OVR KT1 or OVR KT1/PTC on one disconnection strip be clipped onto the earth bar on a neighbouring disconnection strip.

Each OVR Protector is supplied with a small blank label for line identification data to be recorded.

You may find it helpful to mark these and stick them onto the OVR Protector prior to installing it.

(b) OVR K10T1 and OVR K10T1/PTC
Identify which lines require protection
Each disconnection strip which contains lines which connect with the outside world provides transient overvoltages with a route into the electrical system.

Protection must therefore be installed on each of these disconnection strips.

Identify:
(i) all strips which contain incoming lines from your telecommunications provider, and
(ii) any strips providing telephone lines to another building (eg PBX extensions)

Remove any label holders, magazines & GDTs from the disconnection strip

If the disconnection strips requiring protection are already populated with label holders, magazines or gas discharge tubes (see Figure 2) these must be removed before the ABB OVR K10T1 or OVR K10T1/PTC can be installed.

... continued overleaf

Push a protector into each strip requiring protection

Firmly push one OVR K10T1 or OVR K10T1/PTC protector into each disconnection strip requiring protection, so that it clips securely in to the earth point, at each end of the disconnection strip (see Figure 5). Make sure that the side of the protector marked clean is on the equipment side of the disconnection strip and that the line side of the protector is on the side of the disconnection strip which connects with the outside world.

CAUTION: It is vital that the OVR K10T1 or OVR K10T1/PTC is installed the right way round with its clean side on the equipment side of the disconnection strip.

Each protector is supplied with a blank label for line identification data to be recorded.

You may find it helpful to mark it and stick it on to the protector prior to installation (see Figure 6).

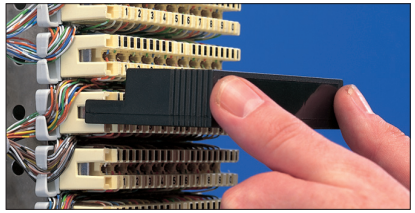

Figure 5:
Firmly push an OVR K10T1 or OVR K10T1/PTC into each of the disconnection strips requiring protection.

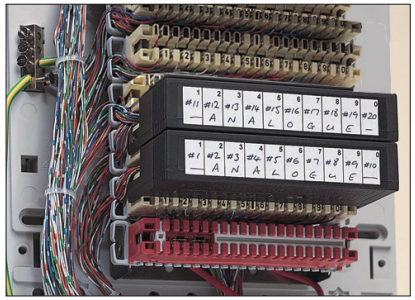

Figure 6:
OVR protectors showing labels marked for line identification.

3.3 Earthing

OVR protectors are connected to earth in the following manner:

– OVR KT1 or OVR KT1/PTC protectors are connected to earth via the OVR KE10 earth bar, which clips directly onto the distribution frame's metal 'backmount frame' (note this is also the earth point for the disconnection strip).

– OVR K10T1 and OVR K10T1/PTC protectors are connected to earth via the disconnection strips earth bar (ie part of the distribution frame's metal 'backmount frame').

Although the backmount frame should already be earthed, this existing earth is unlikely to be sufficient.

We recommend that an earth cable (of at least 4 mm²) is used to provide an additional bond from the distribution frame to the electrical earth of the system requiring protection.

If the backmount frame is composed of separate left and right sections, both should be bonded to this earth.

If the backframe mount is non-metallic, then the earth connection can be made directly to the Faston (6.2 mm) tab connection on the OVR KE10 earth bar (Fig.7) or directly to the M4 earth stud on the OVR K10T1 or OVR K10T1/PTC (Fig.8)

4. After installation

4.1 Keep good records

We recommend that a record is kept of the date of installation, which lines are protected and the dates and results of subsequent inspections. A copy of these installation instructions should be kept with this record.

4.2 Inspect the installation regularly

We recommend that the installation is inspected at least once a year. Check that the protectors and their earth bars are pushed firmly into their disconnection strip(s).

4.3 Checking for failure

When the protector reaches the end of its life it will fail short circuit (in order to prevent subsequent transient overvoltages from damaging the protected equipment).

Consequently, the protected line will cease to function.

In case of suspected failure the protector should be removed. If the protector is damaged the line will now function normally.

A new protector should be installed immediately.

SAFETY NOTE:

1. **Always handle cables by their insulation**
2. **Never work on Surge Protection Devices (SPDs) or their cables during a storm**

Environment
Consider the protection of the environment! Used electrical and electronic equipment must NOT be disposed of with domestic waste. The device contains valuable raw materials which can be recycled. Therefore, contact ABB for disposal of this equipment.

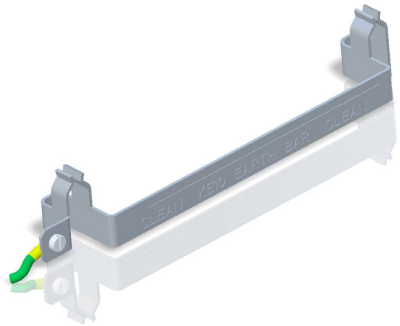

Fig 7:
Earth connection on OVR KE10 earth bar (using M3 ring crimp or Faston tab), for non-earthed module frames.

Fig 8:
Earth connection to earth stud on OVR K10T1 or OVR K10T1/PTC.

Notes

INSTALLATION INSTRUCTIONS

Protecting PBX & ISDN telephone lines

OVR KT & K10T Series

Contact us

ABB Ltd
Tower Court
Foleshill Enterprise Park
Courtaulds Way
Coventry CV6 5NX
Tel: 0333 999 9900
Fax: 0333 999 9901
E-Mail: LV.Enquiries@gb.abb.com
Twitter: @ABBUKLVP

www.abb.co.uk/lowvoltage